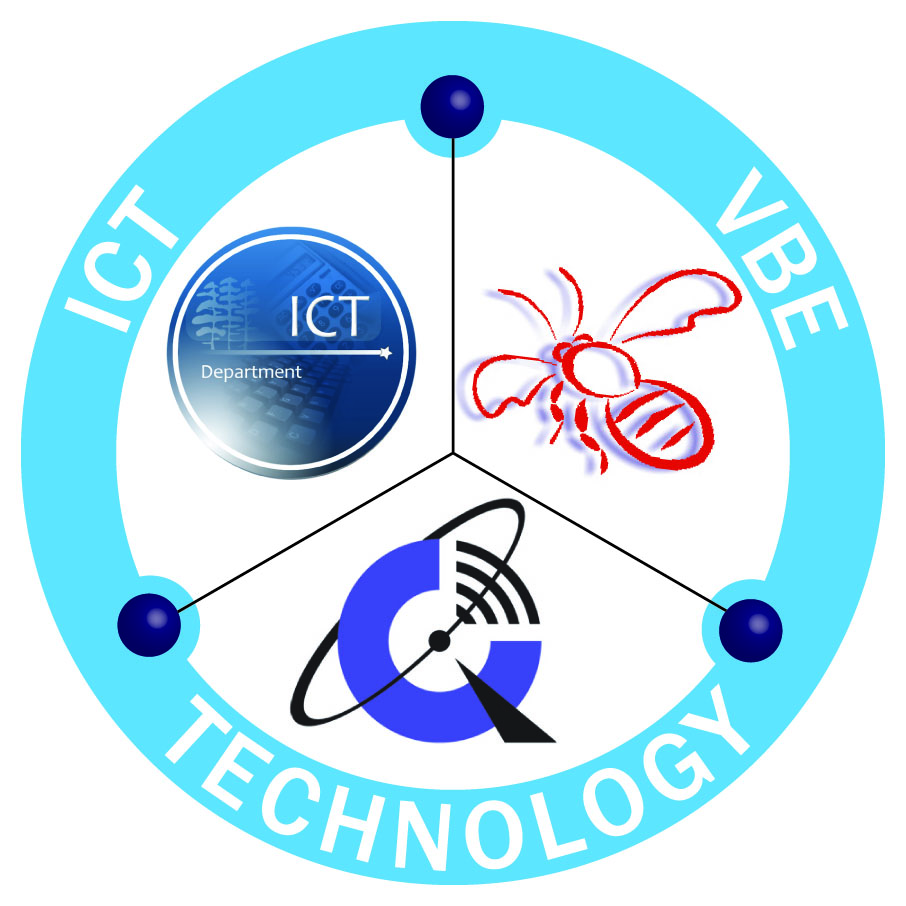
*Numeracy across the curriculum  
objectives*

* *Vocational Programmes*
* ***Business*
* *Travel*
* *Health*

| Numeracy across the curriculum | Specifications |
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| Have a sense of the size of a number | Place value, ordering and rounding  1. Compare and order decimals; know that when comparing measurements they must be in the same units. |
| Recall mathematical facts confidentlyCalculate accurately and efficiently with range of calculation strategies | Calculations with whole numbers and decimals  1. Understand and use the relationships and the principles of the arithmetic laws. 2. Use brackets. 3. Add and subtract numbers 4. Use column addition and subtraction of numbers involving decimals. 5. Know multiplication facts and quickly derive associated division facts. 6. Multiply a two-digit number by a single-digit number mentally. |
| Calculate using fractions, decimals and percentages and use proportional reasoning to simplify and solve problems | Fractions, decimals, percentages, ratio and proportion  1. Add, subtract, multiply and divide fractions; cancel common factors before multiplying or dividing. 2. Compare ratios; interpret and use ratio in a range of contexts including profitability and liquidity. 3. Calculate percentages and find the outcome of a given percentage increase or decrease. 4. Use proportional reasoning to solve a problem, choosing the correct numbers to take as 100%, or as a whole. |
| Use calculators appropriately and efficiently, and select from the display the number of figures appropriate to the context of a calculation | Calculator methods  1. Use a calculator efficiently and appropriately to perform complex calculations with numbers of any size, knowing not to round during intermediate steps of a calculation. 2. Enter numbers and interpret the display in different contexts (decimals, percentages, money, metric measures) |
| Use simple formulae in ratio analysis | Reasoning and generalising Develop from explaining a generalised relationship in words to expressing it in a formula. |
| Understand and use measures of rates such as £ per hour | Measures  1. Appreciate different times around the world in Business and Travel 2. Calculate rates of Pay, VAT and Income Tax 3. Changes in rates such as heart rate and blood pressure  Sequences, functions and graphs  1. Plot the graphs of linear functions arising from real-life problems; discuss and interpret graphs arising from real situations 2. *Solve problems involving constant or average rates of change.* |

| Numeracy across the curriculum | Specifications |
| --- | --- |
| Understand the difference between the mean, median and mode and the purpose for which each is used | Handling data  1. *Find the median and quartiles for datasets.* 2. Compare two or more distributions and make inferences, using the shape of the distributions, the range of data and appropriate statistics. |
| Collect data, discrete and continuous, and draw, interpret and predict from graphs, diagrams, charts and tables | Handling data  1. Collect data by observation, controlled experiment (including data logging), or questionnaire. 2. Gather data from specified secondary sources, including printed tables and lists from ICT-based sources; determine sample size; design data collection sheets. 3. Construct, on paper or using ICT: scatter graphs; line graphs for time series; *lines of best fit*. 4. Construct, on paper or using ICT: pie charts for categorical data; bar charts and frequency diagrams for discrete and continuous data; simple line graphs for time series; simple scatter graphs. 5. Use graphs to show profitability and break even 6. Use graphs to show measures such as height, heart rates blood pressure, weight. 7. Interpret tables, graphs and diagrams for both discrete and continuous data. 8. Have an understanding of correlation and be able to explain this in words |
| Have some understanding of the measurement of risk | Probability Use the language associated with probability to discuss events, including those with equally likely outcomes. |
| Use and apply mathematics to solve problemsExplain methods and justify reasoning and conclusions, using correct mathematical termsJudge the reasonableness of solutions and check them when necessaryGive results to an appropriate degree of accuracy | Applying mathematics  1. Identify and use appropriate operations (including combinations of operations) to solve word problems involving numbers and quantities. 2. Solve word problems and investigate in a range of contexts. 3. Break a complex calculation into simpler steps, choosing and using appropriate and efficient operations, methods and resources. 4. Explain and justify methods and conclusions, orally and in writing.    Checking results  1. Check and explain the results of calculations. |

**\*\*Document devised from National Strategy *Numeracy across the curriculum objectives.***